

ConXT

Documentation version 1.0

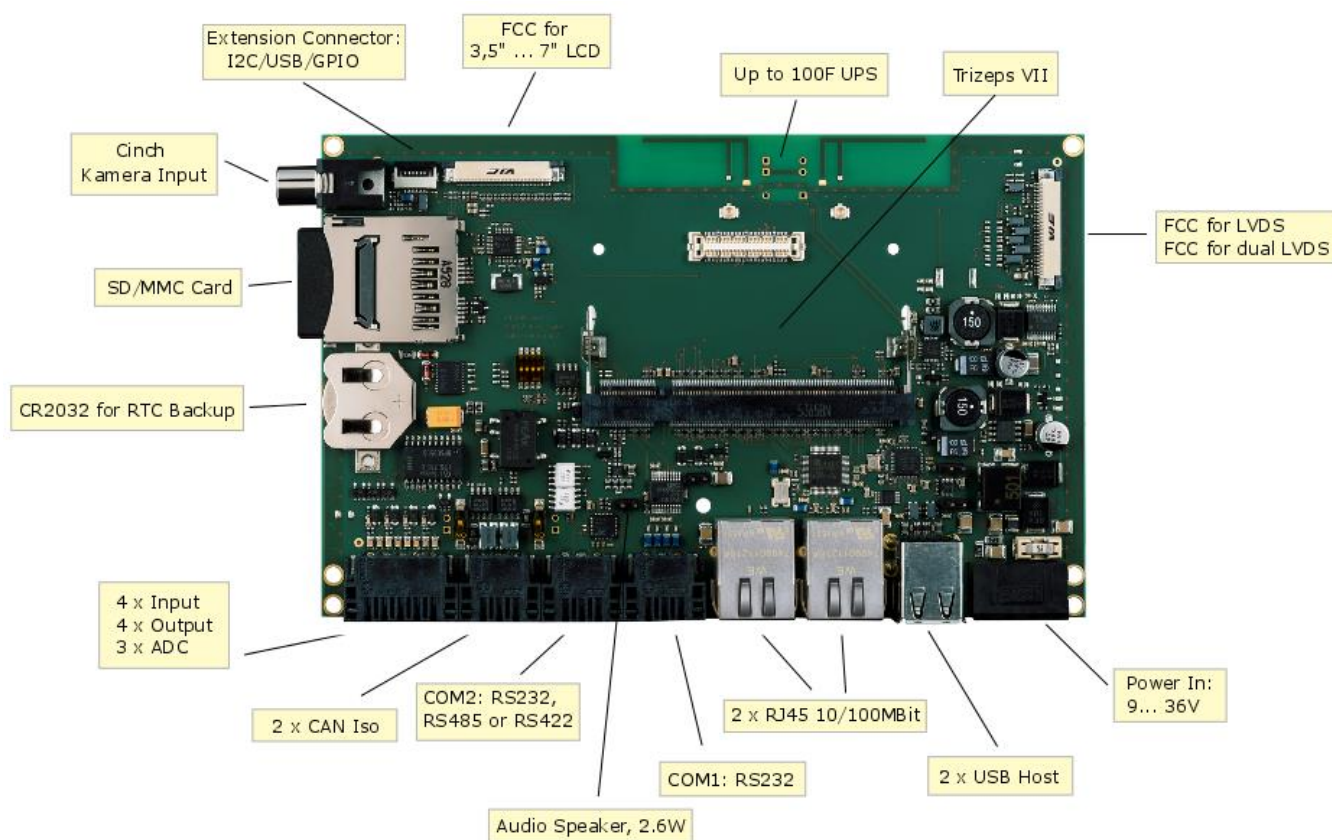


Figure 1: ConXT Baseboard and Features

Introduction

The ConXT is a flat panel PC solution, which may be easily integrated in devices. It includes most peripherals needed by today's typical industrial panel-applications and offers variable display connectivity from 3.5" ... 10".

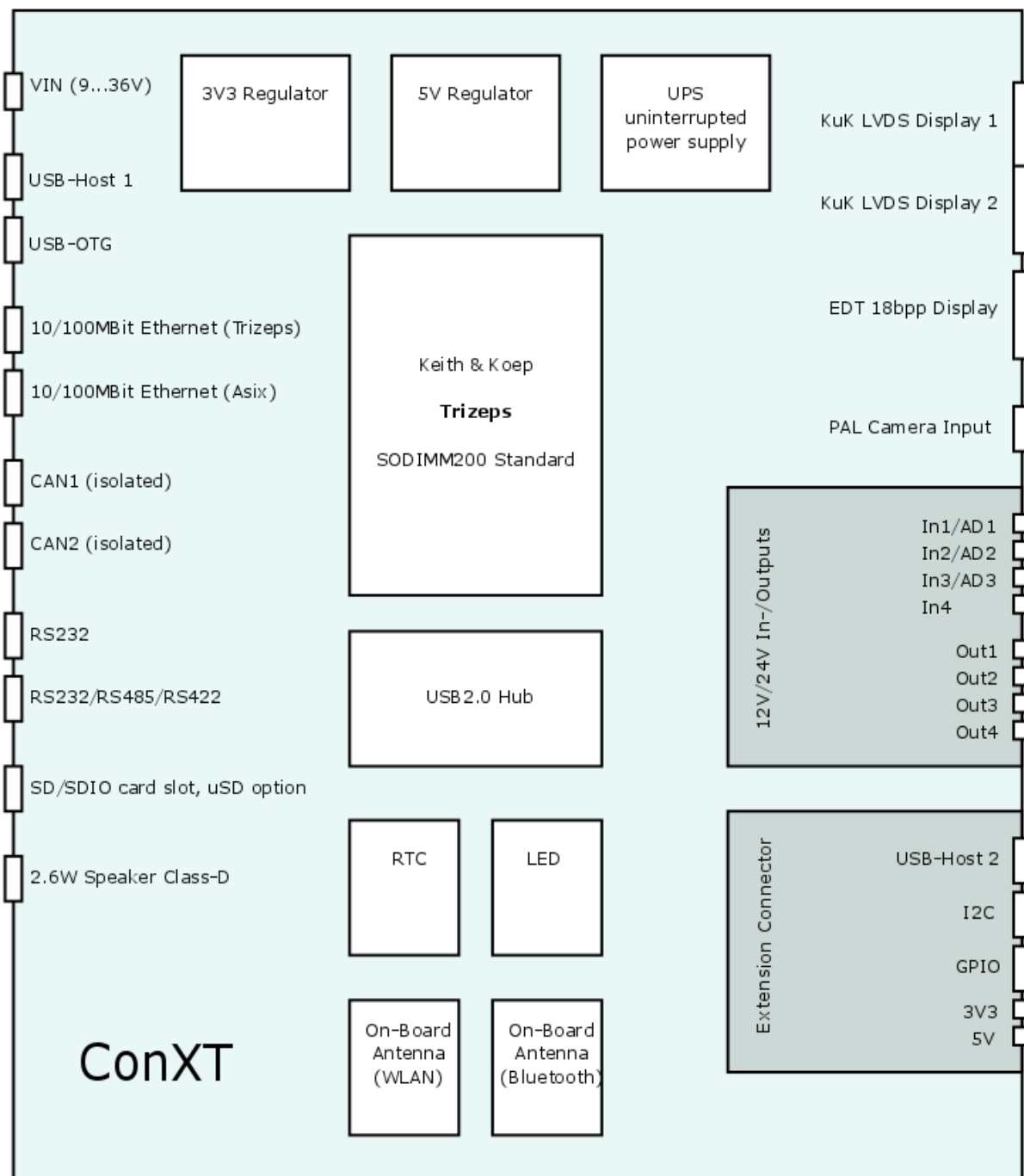


Figure 2: Simplified Block Diagram of ConXT

1 Connector Positions

Interfaces and Connectors of ConXT Baseboard.

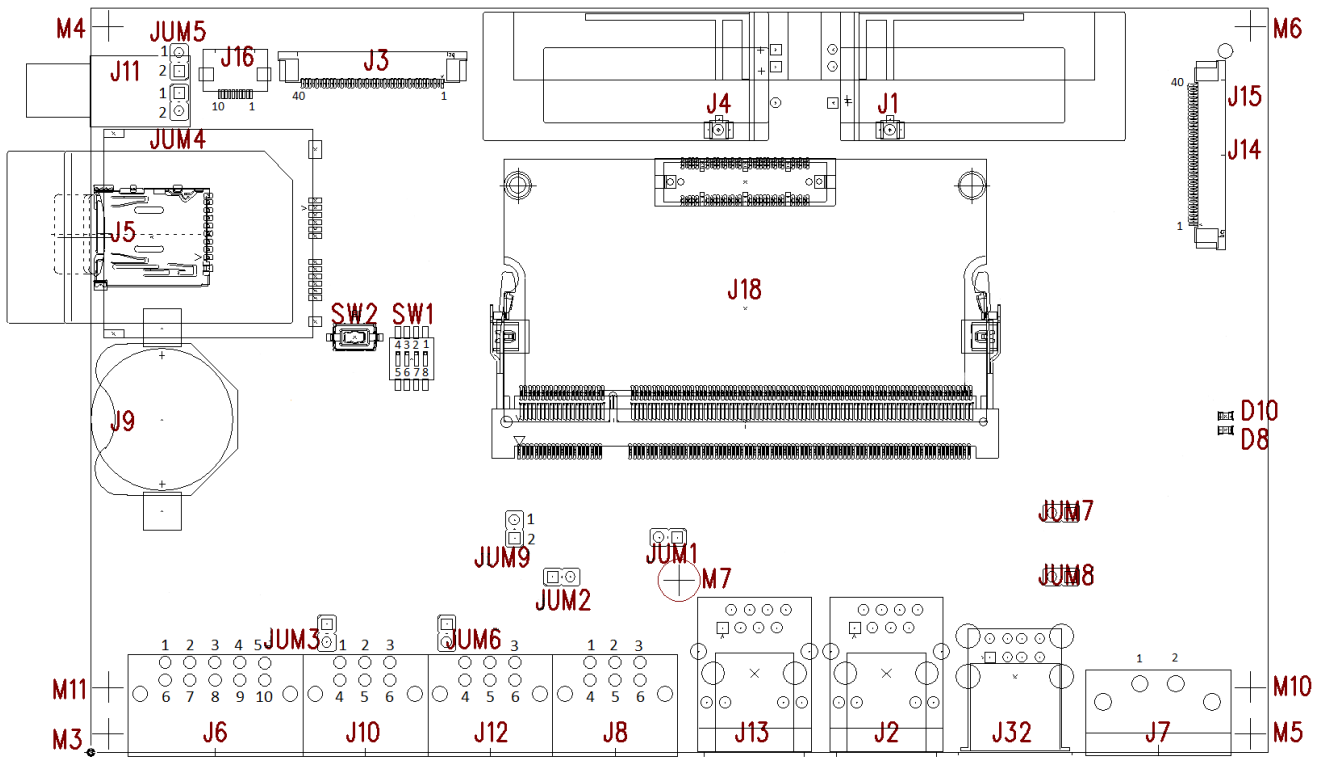


Figure 3: Connector Positions

ConXT front

not true to scale !

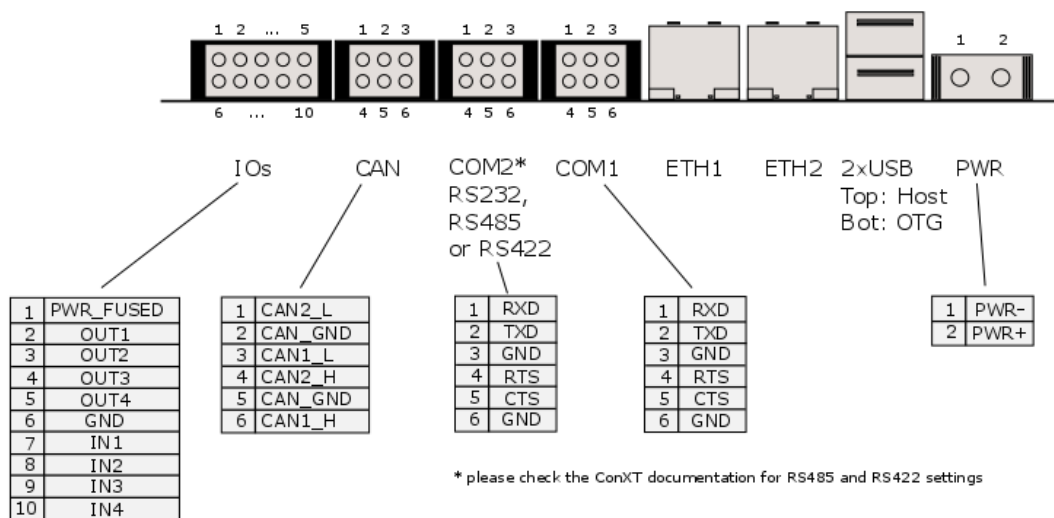


Figure 4: Front Connectors

User Connectors:

J11: PAL Camera Cinch Connector
J5: SD/SDIO Card Slot, uSD Connector optionally
J9: RTC Coin Cell
J6: 12/24V In-/Outputs (ADC)
J10: CAN Connector
J12: COM2 RS232/RS485/RS422 Connector
J8: COM1 RS232 Connector
J13: Ethernet Connector (Trizeps)
J2: Ethernet Connector (Asix)
J32: USB Connector
J7: Power Connector

JUM5: PAL Camera Input 1
JUM4: PAL Camera Input 2
JUM6/S1: CAN1 Termination Resistor
JUM3/S2: CAN2 Termination Resistor
JUM2: Speaker Connector
JUM1: Powerfail-Voltage Select
JUM7: OTG-ID
JUM8: USB-OTG Power
JUM9: Mic Input
SW1: J12 Function Select (RS232/RS485/RS422)
SW2: Fastboot

Internal Connectors:

J18: Trizeps SODIMM200 Socket
J15: KuK LVDS Display Connector 1
J14: KuK LVDS Display Connector 2 (Bottom side)
J3: EDT-Family Concept Connector
J1: UFL Connector for PCB antenna 1
J4: UFL Connector for PCB antenna 2
J16: Front Connector

LED:

D8: General Purpose LED
D10: +3V3 LED

Mounting holes (3.35mm):

M3, M4, M5, M6, M7, M10, M11

1.1 User Connectors

J2: Ethernet Connector (Asix)

This RJ45 Ethernet connector is routed to the on-board ASIX AX88796B Ethernet-controller.

J5: SD/SDIO Card Slot

This SD/SDIO card slot is powered by 3.3V.
An uSD card slot can be placed optionally.

J6: 12/24V In-/Outputs

Signal	Pin	Pin	Signal
PWR_IO (Fused Vin)	1	6	GND
OUT1	2	7	IN1 / AD0
OUT2	3	8	IN2 / AD1
OUT3	4	9	IN3 / AD3
OUT4	5	10	IN4

Connector: Weidmüller 1794880000

J7: Power Connector

Pin	Signal
1	GND
2	VIN (+9V to +36V)

Connector: Phoenix Contact 1776508

J8: RS232 Connector

Signal	Pin	Pin	Signal
COM1_RXD	1	4	COM1_RTS
COM1_TXD	2	5	COM1_CTS
GND	3	6	GND

Connector: Weidmüller 1794860000

J10: CAN Connector

Signal	Pin	Pin	Signal
CAN2_L	1	4	CAN2_H
CAN_GND	2	5	CAN_GND
CAN1_L	3	6	CAN1_H

Connector: Weidmüller 1794860000

J11: PAL Camera Connector 1

RCA CINCH connector for PAL camera input AIN1A.

J12: RS232/RS485/RS422 Connector

RS232-Assignment:

Signal	Pin	Pin	Signal
COM2_RXD	1	4	COM2_RTS
COM2_TXD	2	5	COM2_CTS
GND	3	6	GND

Connector: Weidmüller 1794860000

RS485-Assignment Half Duplex:

Signal	Pin	Pin	Signal
	1	4	RS485_H (A/Y)
RS485_L (B/Z)	2	5	
GND	3	6	GND

Connector: Weidmüller 1794860000

RS485/RS422-Assignment Full Duplex:

Signal	Pin	Pin	Signal
RS422_RX_H (A)	1	4	RS422_TX_H (Y)
RS422_TX_L (Z)	2	5	RS422_RX_L (B)
GND	3	6	GND

Connector: Weidmüller 1794860000

J13: Ethernet Connector (Trizeps)

This RJ45 ethernet connector is routed to the Trizeps module ethernet-interface.

J32: USB Connector

Upper Port: USB-Host 1

Lower Port: USB-OTG-Port

JUM7 and JUM8 are used to configure the OTG-port (set for Host functionality).

1.2 Internal Connectors

J18: Trizeps SODIMM200 Socket

Socket for SODIMM200 Trizeps modules.

J15: KuK LVDS Display Connector 1

Pin	Signal
1	n.c.
2	+3V3
3	+3V3
4	+3V3
5	I2C_CLK
6	I2C_DATA
7	GND
8	LVDS0_TX0_N
9	LVDS0_TX0_P
10	GND
11	LVDS0_TX1_N
12	LVDS0_TX1_P
13	GND
14	LVDS0_TX2_N
15	LVDS0_TX2_P
16	GND
17	LVDS0_CLK_N
18	LVDS0_CLK_P
19	GND
20	LVDS0_TX3_N
21	LVDS0_TX3_P
22	GND
23	GND
24	GND
25	GND
26	BACKLIGHT_ENABLE
27	BACKLIGHT_PWM
28	DISPLAY_ENABLE
29	TOUCH_INT
30	TOUCH_RESET
31	PWR_FUSED (Fused Vin)
32	PWR_FUSED (Fused Vin)
33	PWR_FUSED
34	+5V
35	+5V
36	USB_+5V (switched USB Power-supply)
37	USB_HOST2_DM
38	USB_HOST2_DP
39	USB_OTG_ID
40	GND

Connector: Wuerth WE 68714014022 Top Contact

J14: KuK LVDS Display Connector 2 (Bottom side)

Pin	Signal
1	GND
2	USB_OTG_ID
3	USB_HOST4_DP
4	USB_HOST4_DM
5	USB_+5V (switched USB Power-supply)
6	+5V
7	+5V
8	PWR_FUSED
9	PWR_FUSED
10	PWR_FUSED
11	TOUCH_RESET
12	TOUCH_INT
13	DISPLAY_ENABLE
14	BACKLIGHT_PWM
15	BACKLIGHT_ENABLE
16	GND
17	GND
18	GND
19	GND
20	LVDS1_TX3_P
21	LVDS1_TX3_N
22	GND
23	LVDS0_CLK_P
24	LVDS0_CLK_N
25	GND
26	LVDS0_TX2_P
27	LVDS0_TX2_N
28	GND
29	LVDS0_TX1_P
30	LVDS0_TX1_N
31	GND
32	LVDS1_TX0_P
33	LVDS1_TX0_N
34	GND
35	I2C_DATA
36	I2C_CLK
37	+3V3
38	+3V3
39	+3V3
40	n.c.

Connector: Wuerth WE 68714014522 Bottom Contact

J3: EDT-Family Concept Connector

This connector can be used for Glyn's EDT Family concept LCDs (3.5" ... 7").

Pin	Signal
1	n.c.
2	RESET_OUT_N
3	LCD_DATA_5
4	LCD_DATA_4
5	LCD_DATA_3
6	LCD_DATA_2
7	LCD_DATA_1
8	LCD_DATA_0
9	GND
10	LCD_DATA_11
11	LCD_DATA_10
12	LCD_DATA_9
13	LCD_DATA_8
14	LCD_DATA_7
15	LCD_DATA_6
16	GND
17	LCD_DATA_17
18	LCD_DATA_16
19	LCD_DATA_15
20	LCD_DATA_14
21	LCD_DATA_13
22	LCD_DATA_12
23	GND
24	LCD_PCLK
25	CAP_RST_N
26	LCD_HSYNC
27	LCD_VSYNC
28	Data_ENABLE (L_BIAS)
29	BACKLIGHT_ENABLE
30	+3V3
31	GND
32	GND
33	+3V3
34	+3V3
35	TOUCH_INT
36	BACKLIGHT_PWM
37	I2C_CLK or (TOUCH_TSPY)
38	(TOUCH_TSMX)
39	I2C_DATA or (TOUCH_TSMY)
40	(TOUCH_TSPX)

Connector: Wuerth WE 68714014022 Top Contact

J1: UFL Connector for PCB antenna 1

This UFL-connector can be used to connect the WLAN/BT antenna of the Trizeps-module.

J4: UFL Connector for PCB antenna 2

This UFL-connector can be used to connect the WLAN/BT antenna of the Trizeps-module.

J16: Extension Connector

Pin	Signal
1	+5V
2	USB_HOST3_DM
3	USB_HOST3_DP
4	GND
5	+3V3
6	I2C_CLK
7	I2C_DATA
8	GPIO_INT
9	GPIO_AUX
10	RESET_OUT_N

Connector: Wuerth WE 687110149022 Bottom Contact

1.3 Switches and Jumpers

SW1: J12 Function Select (RS232/RS485/RS422)

Pin	Signal
SW1 1-8	RS485 /RS422
SW1 2-7	RS4xx /RS232
SW1 3-6	Activate RS485 termination
SW1 4-5	RS232 /RS485

(not set /set)

SW2:

Switch button for fast boot activation (optional).

JUM1: Powerfail-Voltage Select

Pin	Signal
Not set	+24V; signal power-fail when voltage drops below ~20V.
Set	+12V; signal power-fail when voltage drops below ~10V.

JUM2: Speaker Connector

Pin	Signal
1	SPEAKER_M
2	SPEAKER_P

JUM3: CAN2 Termination Resistor

Pin	Signal
Not set	Termination resistor not activated.
Set	120R Termination resistor activated.

JUM6: CAN1 Termination Resistor

Pin	Signal
Not set	Termination resistor not activated.
Set	120R Termination resistor activated.

JUM4: PAL Camera Input 2

Pin	Signal
1	GND
2	AIN1B, PAL camera input 2

JUM5: PAL Camera Input 1

Pin	Signal
1	GND
2	AIN1A, PAL camera input 1

JUM7: OTG-ID

Pin	Signal
Not set	USB-OTG port (J32) is an USB-Slave port.
Set	USB-OTG port (J32) is an USB-Host port.

JUM8: USB-OTG Power

Pin	Signal
Not set	No +5V power-supply to USB-OTG port (J32). Use when port is used as USB-Slave.
Set	+5V is connected to USB-OTG port (J32). Use when port is used as USB-Host port.

1.5 LED**D8: 3V3 LED**

The +3V3 LED is on as soon as the +3V3 power supply is active.

D10: General Purpose LED

The general purpose LED is connected to SODIMM-pin 69 of the Trizeps module and can be set using a GPIO.

2 Electrical Pin-Information

PI: Power Input
 PO: Power Output
 CO: Charger Output

AI: Analog Input
 AO: Analog Output
 ADI: Analog Differential Input
 ADO: Analog Differential Output
 ADIO: Analog Differential Input/Output

DI: Digital Input
 DO: Digital Output
 DIO: Digital Input/Output

PD: Pull-Down (PDp: Pull-Down, Pull-behavior can be changed by software)
 PU: Pull-Up (PUp: Pull-Up, Pull-behavior can be changed by software)

SPIN: SODIMM-Pin number. In the tables listed below, typical a transceiver-chip is in between the Trizeps-module and the connector!

J7: Power Connector

PIN	Name	Type	Voltage	Connected To
J7-1	GND			
J7-2	VIN	PI	9 ... 36V	

J8: RS232 Connector

PIN	Name	Type	Voltage	Connected To
J8-1	COM1_RXD	AI	RS232 \pm 12V	SPIN33
J8-2	COM1_TXD	AO	RS232 \pm 12V	SPIN35
J8-3	GND			
J8-4	COM1_RTS	AO	RS232 \pm 12V	SPIN27
J8-5	COM1_CTS	AI	RS232 \pm 12V	SPIN25
J8-6	GND			

J12: RS232/RS485/RS422 Connector

PIN	Name	Type	Voltage	Connected To
J12-1	COM2_RXD	AI	RS232 ±12V	SPIN36
J12-2	COM2_TXD	AO	RS232 ±12V	SPIN38
J12-3	GND			
J12-4	COM2_RTS	AO	RS232 ±12V	SPIN34
J12-5	COM2_CTS	AI	RS232 ±12V	SPIN32
J12-6	GND			
J12-1	RS485_H (A)	ADI	RS485	SPIN36
J12-5	RS485_L (B)	ADI	RS485	SPIN32
J12-4	RS485_H (Y)	ADO	RS485	SPIN34
J12-2	RS485_L (Z)	ADO	RS485	SPIN38
J12-1	RS422_RX_H (A)	ADI	RS485	SPIN32
J12-5	RS422_RX_L (B)	ADI	RS485	SPIN36
J12-4	RS422_TX_H (Y)	ADO	RS485	SPIN34
J12-2	RS422_TX_L (Z)	ADO	RS485	SPIN38

J10: CAN Connector

PIN	Name	Type	Voltage	Connected To
J10-1	CAN2_L	ADIO	CAN	SPIN103
J10-2	CAN_GND	ADIO	CAN	
J10-3	CAN1_L			SPIN99
J10-4	CAN2_H			SPIN101
J10-5	CAN1_GND	ADIO	CAN	SPIN97
J10-6	CAN1_H	ADIO	CAN	

J6: 12/24V In-/Outputs

PIN	Name	Type	Voltage	Connected To
J6-1	PWR_IO	PI	Typical. +12V or +24V	Fused Power-IN
J6-2	OUT1	AO (PO)	PWR_IO	SPIN172
J6-3	OUT2	AO (PO)	PWR_IO	SPIN174
J6-4	OUT3	AO (PO)	PWR_IO	SPIN176
J6-5	OUT4	AO (PO)	PWR_IO	SPIN178
J6-6	GND			
J6-7	IN1 / AD0	AI	PWR_IO	SPIN180, SPIN8
J6-8	IN2 / AD1	AI	PWR_IO	SPIN104, SPIN6
J6-9	IN3 / AD3	AI	PWR_IO	SPIN93, SPIN2
J6-10	IN4	AI	PWR_IO	SPIN95

Logic level for IOs is: Low<4V – hysteresis - High>6V
 ADC linearity is given for 0...30V.

J15: KuK LVDS Display Connector 1

PIN	Name	Type	Voltage	Connected To
J15-2,3,4	+3V3	PO	+3V3	
J15-3	I2C_CLK	DO	+3V3	SPIN196
J15-4	I2C_DATA	DIO	+3V3	SPIN194
J15-8	LVDS0_TX0_N	ADO	+2.5V	
J15-9	LVDS0_TX0_P	ADO	+2.5V	
J15-11	LVDS0_TX1_N	ADO	+2.5V	
J15-12	LVDS0_TX1_P	ADO	+2.5V	
J15-14	LVDS0_TX2_N	ADO	+2.5V	
J15-15	LVDS0_TX2_P	ADO	+2.5V	
J15-17	LVDS0_CLK_N	ADO	+2.5V	
J15-18	LVDS0_CLK_P	ADO	+2.5V	
J15-20	LVDS0_TX3_N	ADO	+2.5V	
J15-21	LVDS0_TX3_P	ADO	+2.5V	
J15-26	BACKLIGHT_ENABLE	DO	+3V3	SPIN73
J15-27	BACKLIGHT_PWM	DO	+3V3	SPIN77
J15-28	DISPLAY_ENABLE	DO	+3V3	SPIN100
J15-29	TOUCH_INT	DI	+3V3	SPIN55
J15-30	TOUCH_RESET	DO	+3V3	SPIN75
J15-31,32,33	PWR_FUSED	PO	Input voltage, protected by fuse.	VIN
J15-34,35	+5V	PO	+5V	
J15-36	USB_+5V	PO	Switched +5V	USB power-switch
J15-37	USB_HOST2_DM	ADIO	+3V3	USB2.0 Hub
J15-38	USB_HOST2_DP	ADIO	+3V3	USB2.0 Hub
J15-7,10,13,16,19,22,23,24,25,40	GND			

Available adaptations for displays:

- 10" EDT ETML101001DKA
- 10" EDT ETML101000DH6
- 10" Datamage SCF1001C44GGU05

J14: KuK LVDS Display Connector 2 (option on bottom side of PCB)

PIN	Name	Type	Voltage	Connected To
J14-37,38,39	+3V3	PO	+3V3	
J14-36	I2C_CLK	DO	+3V3	SPIN196
J14-35	I2C_DATA	DIO	+3V3	SPIN194
J14-33	LVDS1_TX0_N	ADO	+2.5V	
J14-32	LVDS1_TX0_P	ADO	+2.5V	
J14-30	LVDS1_TX1_N	ADO	+2.5V	
J14-29	LVDS1_TX1_P	ADO	+2.5V	
J14-27	LVDS1_TX2_N	ADO	+2.5V	
J14-26	LVDS1_TX2_P	ADO	+2.5V	
J14-24	LVDS1_CLK_N	ADO	+2.5V	
J14-23	LVDS1_CLK_P	ADO	+2.5V	
J14-21	LVDS1_TX3_N	ADO	+2.5V	
J14-20	LVDS1_TX3_P	ADO	+2.5V	
J14-15	BACKLIGHT_ENABLE	DO	+3V3	SPIN73
J14-14	BACKLIGHT_PWM	DO	+3V3	SPIN77
J14-13	DISPLAY_ENABLE	DO	+3V3	APIN100
J14-12	TOUCH_INT	DI	+3V3	SPIN55
J14-11	TOUCH_RESET	DO	+3V3	SPIN75
J14-8,9,10	PWR_FUSED	PO	Input voltage, protected by fuse.	VIN
J14-6,7	+5V	PO	+5V	
J14-5	USB_+5V	PO	Switched +5V	USB power-switch
J14-4	USB_HOST4_DM	ADIO	+3V3	USB2.0 Hub
J14-3	USB_HOST4_DP	ADIO	+3V3	USB2.0 Hub
J14-1,16,17,18,19,22,25,28,34	GND			

KuK LVDS Display Connector 2 is not equipped by default.
Dual LVDS on demand.

J3: EDT-Family Concept Connector

PIN	Name	Type	Voltage	Connected To
J3-2	RESET_OUT_N	DO	+3V3	SPIN87
J3-3...8	LCD_DATA_05-00	DO	+3V3	
J3-10...15	LCD_DATA_11-06			
J3-17...22	LCD_DATA_17-12			
J3-24	LCD_PCLK	DO	+3V3	SPIN56
J3-25	CAP_RST_N	DO	+3V3	SPIN75
J3-26	LCD_HSYNC	DO	+3V3	SPIN68
J3-27	LCD_VSYNC	DO	+3V3	SPIN82
J3-28	DATA_ENABLE	DO	+3V3	SPIN44
J3-26	BACKLIGHT_ENABLE	DO	+3V3	SPIN73
J3-30, 33,34	+3V3	PO	+3V3	
J3-35	TOUCH_INT	DI	+3V3	SPIN55
J3-36	BACKLIGHT_PWM	DO	+3V3	SPIN77
J3-37	TOUCH_TSPY or I2C_CLK	AIO / DO	+3V3	SPIN18 / SPIN196
J3-38	TOUCH_TSMX	AIO	+3V3	SPIN16
J3-39	TOUCH_TSMY or I2C_DATA	AIO / DIO	+3V3	SPIN20 / SPIN194
J3-40	TOUCH_TSPX	AIO	+3V3	SPIN14
J3-9,16, 23,31, 32	GND			

J16: Extension Connector

PIN	Name	Type	Voltage	Connected To
J16-1	+5V	PO		
J16-2	USB_HOST3_DM	ADIO	+3V3	USB2.0 Hub
J16-3	USB_HOST3_DP	ADIO	+3V3	USB2.0 Hub
J16-4	GND			
J16-5	+3V3	PO		
J16-6	I2C_CLK	DO	+3V3	SPIN196
J16-7	I2C_DATA	DIO	+3V3	SPIN194
J16-8	GPIO_INT	DIO	+3V3	SPIN43
J16-9	GPIO_AUX	DIO	+3V3	SPIN98
J16-10	RESET_OUT_N	DO	+3V3	SPIN87

3 Specifications

3.1 Absolute Maximum Ratings

Absolute maximum ratings reflect conditions that the module may be exposed outside of the operating limits, without experiencing immediate functional failure. Functional operation is only expected during the conditions indicated under "Recommended Operating Conditions". Stresses beyond those listed under "Absolute Maximum Ratings" may cause permanent damage to the system. Exposure to absolute-maximum rated conditions for extended periods may affect device reliability.

	Pin	Min	Max	Unit
Supply Voltage	+Vin	7	36	V
Storage Temperature	T _{Storage}	-40	+100	°C

3.2 Recommended Operating Conditions

	Pin	Min	Typ	Max	Unit
Supply Voltage	+Vin	9	12/24	28	V
Supply current			510*		mA
Operating temperature			tbd		°C

* ConXT Full Function, Vin 12V, Trizeps VII dual lite, EDT 7" LCD full backlight

3.3 Mechanical Specification

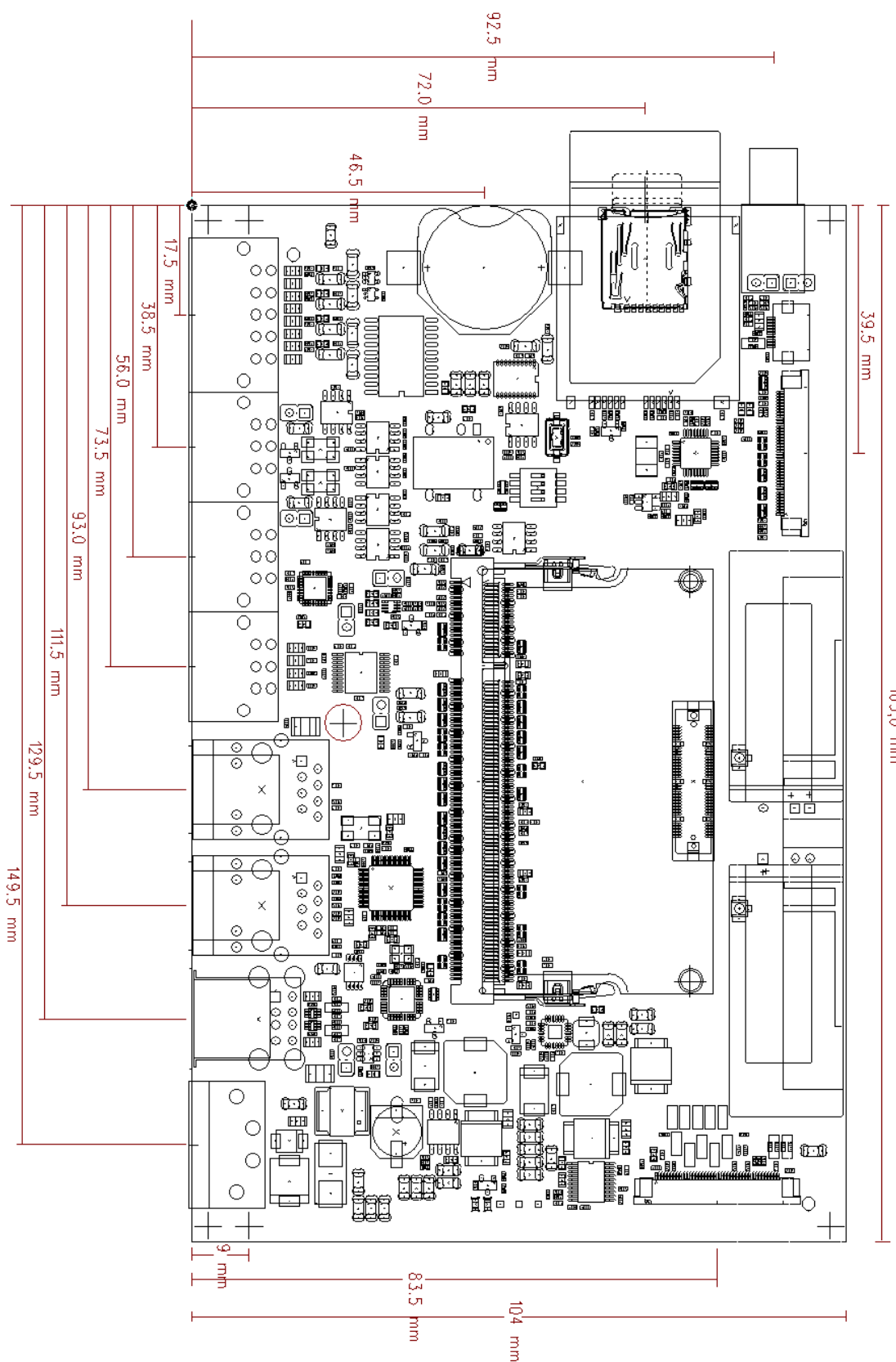


Figure 5: Top-View on ConXT_v1r4

4 Ordercodes for ConXT

tbd

5 Important Notice

6 Document History

Rev.	Date	Author	Changes
0.9	23.02.2016	SH, PD	Initial Version.
?	11.03.2016	SH	Corrected J12 RS232/RS485/RS422 Pin assignment.
1.0	20.02.17	PD	New revision